**BUREAU OF AUTOMOTIVE REPAIR**

# INITIAL STATEMENT OF REASONS

**HEARING DATE:** March 23, 2009 and March 25, 2009

**SUBJECT MATTER OF PROPOSED REGULATIONS:** Emission Inspection System Revisions

Vehicle Lookup Table Row Specific Emissions Standards (Cutpoints); Pass/Fail Criteria for On-Board Diagnostic System Readiness Monitors; Revisions to Emission Inspection System Specifications; and Disabling Process for Non-Compliant Emission Inspection System

**SECTIONS AFFECTED:** §§ 3340.17, 3340.42 and 3340.42.2 of Article 5.5 of Chapter 1, Division 33, Title 16, California Code of Regulations

## SPECIFIC PURPOSE OF REGULATORY PROPOSAL:

This regulatory proposal implements the following four enhancements to the Smog Check Program:

I. A revision of the emissions standards (cutpoints) to more accurately reflect the emission performance capability of individual vehicles. This proposed action will revise cutpoints based on analyses and recommendations from a report completed by Sierra Research (Sierra).

II. The inclusion of pass/fail criteria for On-Board Diagnostic (OBDII) system readiness monitors. This proposed action complies with the U.S. Environmental Protection Agency (USEPA) Inspection and Maintenance (I/M) Rule, which requires a test of the OBDII readiness monitors in order to determine whether the OBDII system is functioning properly.

III. Incorporate by reference the revised Emission Inspection System (EIS) Specifications. The EIS Specifications are revised to accommodate the proposed Vehicle Lookup Table (VLT) Row Specific Emissions Standards (Cutpoints) and the proposed pass/fail criteria for OBDII system readiness monitors. Also included in the revised EIS Specifications are modifications that will allow Smog

Check inspections on diesel-powered vehicles.

IV. Clarification of existing language that prevents a station from using a non-compliant EIS to perform Smog Check inspections by specifying how the EIS will be disabled through the Vehicle Information Database (VID).

The proposed action also includes several minor technical, grammatical and editorial changes that have no regulatory effect or that are conforming.

The proposed action will make the following changes to existing regulation:

1. Amend Section 3340.17 of Article 5.5 of Chapter 1, Division 33, Title 16, California Code of Regulations, as follows:

   a. Amend subsection (b) to change the revision date of the EIS Specifications, incorporated by reference from December 2001 to August 2008.

      This edit reflects the correct version of the EIS Specifications that includes new requirements to store multiple VLTs, the addition of a VLT referencing pointer, and the addition of model-year-specific default records. Also included in the revised EIS Specifications are modifications that will allow Smog Check inspections on diesel-powered vehicles.

   b. Amend subsection (g) as follows: "disconnected from the bureau's" has been changed to read "disabled from communicating with the bureau's" and "also known as the Vehicle Information Database (VID)" has been inserted. A sentence has been added to the end of the paragraph stating "When any non-compliant EIS communicates with the VID, the Bureau will send a command from the database to disable the ability of the EIS to perform Smog Check tests or inspections."

      This edit clarifies the process involved that prevents a station from using a non-compliant EIS to perform Smog Check inspections by specifying how the EIS will be disabled through the VID.

2. Amend Section 3340.42 of Article 5.5 of Chapter 1, Division 33, Title 16, California Code of Regulations, as follows:

   a. The first sentence of Section 3340.42 is edited to include BAR-97 Emissions Inspections System Specifications referenced in Section 3340.17 (a) and Section 3340.42.2.

This edit clarifies that Smog Check stations and technicians are to conduct tests and inspections in accordance to the BAR-97 EIS Specifications in both Enhanced and Basic program areas and specifies the pass/fail criteria for OBDII system readiness monitors.

b. Amend subsection (a) as follows: "The loaded mode test method," has been changed to read "A loaded mode test," and "to inspect vehicles registered" has been inserted. "The loaded-mode test equipment shall be… (ASM)" has been edited to read "The loaded-mode test shall use… (ASM)." Amend subsection (1) to replace "driving wheels" with "drive wheels."

These edits are intended to improve clarity and readability and have no regulatory effect.

c. Amend subsection (3) to add language stating that the current emission standards tables will remain in use until such time as a revised cutpoint table(s) is adopted into regulation and activated.

This edit is necessary to clarify that the current procedure remains in place until a new cutpoint table(s) is adopted and activated by the Bureau of Automotive Repair (BAR). Even after the implementation of the vehicle specific cutpoints, the current tables will continue to provide cutpoints for vehicles not specifically mentioned in the new cutpoint table.

d. The current subsection (4) is renumbered to (5) and a new subsection (4) is added to incorporate by reference the new *Vehicle Lookup Table (VLT) Row Specific Emissions Standards (Cutpoints) Table*, dated August 30, 2008, which will include the new row specific cutpoints table to be used with the Acceleration Simulation Mode (ASM) test. When activated, the new row specific table will take precedence over the current cutpoint Tables I and II. The current Tables I and II will be used as defaults for vehicles not included in the new row specific table. This subsection indicates that exhaust emissions shall be measured and compared to the applicable emissions standards contained in the *VLT Row Specific Emissions Standards (Cutpoints) Table* or Tables I and II, for purposes of determining whether the vehicle fails or passes the ASM emissions test portion of a Smog Check inspection.

The process by which the EIS software accesses emissions standards for individual vehicles does not change with the revised cutpoints or with the new specifications. In both cases, the EIS

software first accepts emissions standards transmitted directly from the VLT through the VID. If cutpoints exist within the VLT row for the vehicle being inspected, the software will use those cutpoints to determine the pass/fail result during the emissions portion of the inspection. If cutpoints are not found on the VLT Row Specific Emission Standards (Cutpoints) for the specific vehicle, the software will assign cutpoints based upon the current cutpoint Tables I and II.

e. The first sentence of subsection (b) is edited to change "The two-speed idle" to "A two-speed idle," and to insert "unless otherwise specified" and "to inspect vehicles registered." The first sentence is also edited to replace "other than the enhanced program areas" with "except those areas where the enhanced program has been implemented." A sentence has been added to the end of the paragraph which matches the language in subsection (4) stating that a vehicle passes the test if all of its emissions are less than or equal to the standards specified in the applicable tables.

These edits clarify the program description and the test procedure that is required as well as conform to the language used in subsection (a).

f. In subsection (d)(3), "Fuel Evaporative Controls" is changed to read "Liquid Fuel Leak."

This edit to the regulation conforms with the language used when test results are entered into the EIS that contain a specific category for entry of liquid fuel leak test results.

g. In subsection (g)(1), "loaded-mode testing method" has been changed to "loaded-mode test."

This edit clarifies that a test, rather than a method, is conducted on vehicles in this category.

h. In paragraphs (1) and (3) of subsection (h), "Tables I, II or III" has been changed to "the tables described in subsections (a) and (b), as applicable."

This edit eliminates the need to repeat the language describing the tables and procedures identified in subsections (a) and (b) and provides consistency conforming to the proposed changes.

3. Add 3340.42.2 Pass/Fail Criteria for On-Board Diagnostic System Readiness Monitors

This new section provides the specific requirements for a vehicle to be certified in compliance with USEPA's Inspection and Maintenance (I/M) Rule that sets the guidelines for vehicle I/M programs nationwide and requires that a test of the On-Board Diagnostic (OBDII) System's readiness monitors be incorporated into the Smog Check inspection. An OBD inspection has been included as part of the Smog Check test since 2002. The current readiness monitor evaluation determines if the vehicle's OBD system has completed a sufficient number of diagnostic tests to ensure a meaningful OBD evaluation. This edit ensures compliance with USEPA's I/M Rule.

Incorporation by Reference:

The incorporation by reference in Section 3340.42 of the *Vehicle Lookup Table (VLT) Row Specific Emissions Standards (Cutpoints) Table*, dated August 30, 2008, is appropriate since publishing this table in the California Code of Regulations would be cumbersome, unduly expensive, impractical and unnecessary. The table spans over 200 pages, with over 6,000 lines of information for individual vehicles or groups of vehicles manufactured from 1976 to 1995. This table is a physical representation of the emission measurement values contained in the electronic database of the EIS that is used to determine whether a particular vehicle passes or fails the Smog Check inspection when its exhaust emissions are sampled. The volume of this information greatly exceeds that of the three tables currently included in Section 3340.42, making it cumbersome and impractical to include the information in the regulation text. This information, in this form, has limited value to the Smog Check industry or the general public since the application of the data is performed automatically through the EIS. The actual cutpoints are printed on the vehicle inspection report and are provided to the customer at the conclusion of the inspection. Therefore, it is unnecessary to print this information in the text of the regulation itself. However, should anyone wish to examine the *Vehicle Lookup Table (VLT) Row Specific Emissions Standards (Cutpoints) Table*, it is always available upon request from BAR. The *Vehicle Lookup Table* (*VLT) Row Specific Emission Standards (Cutpoints) Table* will also be available for review throughout this rulemaking process and will be available on BAR's Web site www.smogcheck.ca.gov.

The incorporation by reference in Section 3340.17 of the *BAR-97 Emission Inspection System Specifications*, dated May 1996, as revised August 2008, is appropriate since publishing this document in the California Code of Regulation would be cumbersome, unduly expensive, impractical and unnecessary. This revision reflects the correct version of the EIS Specifications that includes new requirements to store multiple VLTs, the addition of a VLT referencing pointer, and the addition of model-year-specific default records. Also included in the revised EIS Specifications are modifications that will allow Smog Check inspections on diesel-powered vehicles. The revised *BAR-97 Emission Inspection System Specifications* will be incorporated by reference, replacing the version dated May 1996, revised through December 2001, with a completely new version updated through August 2008. If anyone should wish to examine the revised *BAR-97*

*Emission Inspection System Specifications*, it is always available upon request from BAR. The revised *BAR-97 Emission Inspection System Specifications* will also be available for review throughout this rulemaking process and will be available on BAR's Web site www.smogcheck.ca.gov.

**FACTUAL BASIS:**

The Bureau of Automotive Repair, within the Department of Consumer Affairs, is the state agency charged with the administration and implementation of the Smog Check Program. The Smog Check Program is designed to reduce emissions from mobile sources, such as passenger vehicles and trucks, by requiring that these vehicles meet specific emissions standards. To ensure uniform and consistent vehicle testing, BAR licenses Smog Check stations and technicians and certifies inspection equipment.

The health effects of air pollution have been well documented. At greatest risk are children, the elderly, and those with heart and lung diseases. Pollutants of concern include ozone (or smog), particulates, and toxic air pollutants. Ozone is formed from the interaction, in the presence of sunlight, of hydrocarbons (HC) and oxides of nitrogen (NOx), both of which are emitted from motor vehicles. The effects from short-term exposure to ozone include hospital admissions for respiratory causes, emergency-room visits for asthma, minor restricted activity days, acute respiratory symptoms, exacerbation of asthma, and premature mortality (Air Resources Board, 2001). Mobile source emissions reductions are achieved when high emitting vehicles are identified and then repaired. If high emitting vehicles are not identified and repaired, the effectiveness of the Smog Check Program is greatly diminished.

In an effort to further improve air quality in the nation, the federal government passed the Clean Air Act Amendments of 1990 requiring ozone non-attainment areas classified as serious, severe, or extreme to implement an enhanced inspection and maintenance (I/M) program capable of further reducing ground-level ozone.

To meet the requirements of federal law, California implemented ASM testing in 1998. This test procedure is different from the Federal Test Procedure (FTP), the test procedure to which manufacturers design their vehicles. Because these two "loaded-mode" test procedures are different, not all vehicles respond identically to the two tests. In some cases, vehicles that perform well on the FTP may respond differently to the ASM procedure due to some design differences, even when emission control systems are in proper working condition. In most cases, the difference between the number of vehicles that pass or fail the two tests is minimal, so the ASM procedure was accepted by USEPA as a reasonable surrogate to the FTP procedure.

VLT Row Specific Emission Standards

Motor vehicles that require a loaded-mode ASM emissions test fail the emission portion of the Smog Check inspection when their emission readings exceed values specified in one of the cutpoint tables included in Section 3340.42. The table for passenger cars and light-duty trucks consists of only 52 different cutpoint categories. However, over 21,000 different vehicle configurations currently exist in the affected vehicle population. Research commissioned by the Air Resources Board (ARB) and BAR has shown that group-specific cutpoints would reduce emissions of hydrocarbons and oxides of nitrogen by an estimated 5.5 – 7.8 tons per day, depending on the stringency of the new cutpoints.

In a 2004 Smog Check Program evaluation report required by USEPA, ARB and BAR noted that there were large differences between the average emissions of vehicles passing the Smog Check inspection and those that had failed and subsequently received repairs. For example, average hydrocarbon emissions were 0.76 grams per mile for passing vehicles and 1.09 grams per mile for vehicles that failed Smog Check, were subsequently repaired, and then passed a retest. In other words, a vehicle that passes its initial test is, on average, only 30 percent cleaner than a vehicle that passes a follow-up test after an initial failure. The agencies concluded that vehicles were not being fully repaired and announced plans to study the benefits of requiring more stringent after-repair cutpoints to encourage more thorough emissions-related repairs. However, in a 2005 study commissioned by ARB and BAR and performed by Sierra Research, it was determined that more meaningful benefits could be cost effectively achieved by tightening the initial emission failure cutpoints for selected vehicles that normally operate much cleaner than current cutpoints require.

When loaded-mode testing began in 1998, ARB and BAR created broad emission standard categories to be used for the Smog Check pass/fail decision on a vehicle's tailpipe emissions. Cutpoints were calculated within each emission standards category (ESC) as a function of individual vehicle test weight to better approximate the stringency of the FTP test for new vehicles. While the current cutpoints do, on the whole, correlate reasonably well with a vehicle's performance on the FTP test, they do not take into account individual vehicle design considerations that may affect a vehicle's performance during the ASM test.

The study conducted by Sierra provides a compelling argument for a viable alternative to after-repair cutpoints and provides for significant emission reductions with a simple implementation process. Sierra compared Wisconsin and Arizona emissions data to California's. Both Wisconsin and Arizona use "transient testing" that more closely mimics the FTP test and actual driving conditions than the ASM steady state procedure used in California. Sierra divided vehicles into many categories, using model-year, manufacturer, make, model, engine displacement, and other factors.

Sierra's analysis only examined 1976 through 1995 model-year vehicles because comparable loaded-mode data for vehicles newer than the 1995 model-year were not

available from either Wisconsin or Arizona.[1] For this reason, revised cutpoints for 1996 and newer vehicles could not be generated using the procedure developed by Sierra. For California's Smog Check Program, inspection procedures for 1996 and newer vehicles includes both the loaded-mode ASM and the OBDII tests.

For 1976 through 1995 model-year vehicles, Sierra estimated that ASM failure rates could be increased from 10.4 percent to between 11.9 percent and 12.8 percent. This could be done while maintaining the error of commission rate (falsely failing vehicles) well within the statutory limit[2] of 5 percent. Further, Sierra estimated the emissions benefits include up to 7.8 tons per day (tpd) of Reactive Organic Gases (ROG) and Oxides of Nitrogen (NOx) and estimated the cost effectiveness of these emissions reductions to be up to $8,200 per ton in 2010.

The procedure for utilizing VLT row specific cutpoints already exists within the current BAR-97 specifications. In all cases, the EIS software first accepts vehicle specific cutpoints passed down through the VID to the EIS. If no cutpoints are passed down, the EIS then accesses the VLT, resident on the EIS, to determine if vehicle-specific cutpoints exist. When the cutpoints are present, the software will use those cutpoints to determine the pass/fail result for a vehicle during the emissions portion of the inspection. If cutpoints are not found for the specific VLT row in question, the software will assign cutpoints based upon Tables I or II in the BAR regulations.

Pass/Fail Criteria for On-Board Diagnostic System Readiness Monitors

The USEPA required new vehicle manufacturers to incorporate On-Board Diagnostic (OBD) systems into all 1996 and newer model-year vehicles. An On-Board Diagnostic system is controlled by a computer located in the vehicle that alerts motorists via a dashboard display when either emission control components or powertrain systems that affect emissions are not functioning correctly. It is designed to encourage motorists to seek repairs in order to clear the dashboard display as a proactive means of addressing air quality issues.

The OBD system performs diagnostics on emission-related components by monitoring the system as the vehicle is being operated. (Thus, these self-diagnostic tests are commonly referred to as "monitors.") Some of the monitoring is done continuously while the vehicle is being driven and other monitors only operate under certain conditions. If there is a malfunction of the vehicle's components subject to monitoring, the OBD system records a code that indicates which component failed (referred to as a diagnostic trouble code or "DTC"). At the same time, a dashboard display illuminates the malfunction indicator light or "MIL". The DTC and MIL remain until the OBD monitor reruns without finding a malfunction, presumably after the vehicle component has been repaired. Technicians can manually clear both the DTC and the MIL to verify their repairs.

[1] Both of those states' programs inspect 1996 and newer vehicles using the OBDII protocol exclusively, in place of loaded-mode tests.
[2] Health and Safety Code section 44013

USEPA's Inspection and Maintenance (I/M) Rule, 40 Code of Federal Regulation (CFR) Parts 51 and 85, set the guidelines for vehicle I/M programs nationwide to require a periodic test of the On-Board Diagnostic (OBD) System. An OBD inspection has been included as part of the Smog Check test since 2002. The OBD system test includes a check to see if there are any stored DTCs, if the MIL is illuminated, and if the light bulb for the MIL is operational.

In addition, because DTCs can be cleared on purpose or by accident[3] prior to a Smog Check inspection, a check is made to ensure that the monitors have performed a diagnostic check of the emission control components since the last time the computer was reset. This check is referred to as a "readiness monitor check." Due to the fact that some early OBD systems have difficulty performing diagnostic checks on specific components, some vehicles equipped with the early OBD systems are unable to report that all the monitors have completed their diagnostic check. To accommodate these early OBD systems, the I/M Rule permits continuation of the OBD test on 1996-2000 model-year vehicles providing no more than two monitors have yet to complete a diagnostic check. For model-year vehicles 2001 and newer, the I/M Rule permits continuation of the test if no more than one monitor has yet to complete a diagnostic check.

Currently, California's Smog Check Program applies the federal standard for 1996 to 2000 model-year vehicles of "no more than two monitors" to all 1996 and newer vehicles. By applying the more lenient standard for older OBD equipped vehicles to vehicles with newer, more sophisticated OBD systems, California is not taking full advantage of the OBD technology.

For example, in 2007, approximately five percent of 2001 and newer model-year vehicles passed the Smog Check test with two monitors not ready, and would have failed if the standard proposed by this regulatory action was in place. As a result, an opportunity for identifying vehicles with repairable emission defects (thereby reducing harmful pollution) is not realized under California's current readiness requirements.

The process for assigning model-year-specific OBDII readiness requirements already exists. The analyzer software obtains vehicle specific OBDII readiness information directly from the VLT. When limits are not available in the VLT, the software uses limits provided to the EIS through the VID.

Revisions to Emission Inspection System Specifications

Health and Safety Code section 44036 allows the department to revise the emissions inspection system specifications for Smog Check equipment annually if the cost of

[3] For example, DTC clearing can occur if a vehicle battery cable is intentionally disconnected or accidentally becomes disconnected from the battery. This causes the OBD system to lose all stored information.

implementing the revision is less than 20 percent of the total system cost. More extensive revisions may also be required, but not more often than every 5 years. The specification revisions necessary to implement the revised VLT and implement revised OBDII readiness criteria are relatively simple and inexpensive. Current estimates place the cost of the update at less than $300 per EIS system, well within the 20 percent limit when considering that an EIS system retails in the $23,000 to $36,000 range. Furthermore, the specifications were last revised in December 2001. Equipment manufacturers have been allowed to review and comment on the revised specifications, as required in H&S Code section 44036.

The current version of the *BAR-97 Emission Inspection System Specifications,* dated May 1996, revised December 2001, and incorporated by reference in CCR Section 3340.17(b) requires updating to allow the BAR-97 EIS to store multiple VLTs, provide a method for instructing analyzers which VLT table to reference for each vehicle being tested, and incorporate a method for assigning model-year-specific default records in place of the model-year-generic default records used in the past. Also included in the revised EIS Specifications are modifications that will allow Smog Check inspections on diesel-powered vehicles as required by law.[4] The formal diesel test procedures and any other items related to testing diesel vehicles less than 14,000 Gross Vehicle Weight Rating (GVWR) will be addressed in a future regulation. The decision to include both cutpoints and diesel updates in the revised EIS Specifications was made to minimize fiscal impact to the State.

Disabling Process for Non-Compliant Emission Inspection Systems

Mandatory Smog Check inspections must be performed using Smog Check test equipment certified by BAR. This includes the software that operates the equipment. Currently, the Smog Check test is performed statewide using the BAR-97 EIS. Periodically, new or updated hardware and/or software are required to either address program changes or defects in the equipment or software. BAR certifies the revised hardware and/or software. Smog Check stations are notified of the changes and provided with a deadline for installing the updated hardware and/or software (identified by a unique version number).

In order to ensure that official Smog Check inspections are performed uniformly, BAR works with the stations and the private companies that create and update the software and hardware to minimize the amount of time that stations are operating with different versions. Regardless, some stations continue to perform tests without the latest version of BAR-certified hardware and/or software. As a result, vehicle owners could be subject to inconsistent inspections and mandated program changes may not be performed by all Smog Check stations.

Currently, BAR has the authority to disconnect any EIS that does not comply with the hardware and software requirements and specifications from the Bureau's centralized

[4] Chapter 739, Statutes of 2007 (AB 1488, Mendoza)

computer database and network. As a result, Smog Check stations are prohibited from performing Smog Check inspections and are unable to transmit certificates of compliance to the Department of Motor Vehicles until they are brought into compliance.

This regulatory amendment clarifies existing language that prevents a station from using a non-compliant EIS to perform Smog Check inspections by specifying how the EIS will be disabled through the VID.

**UNDERLYING DATA:**

Technical, theoretical or empirical studies or reports relied upon:

- Air Pollution and Health. *Air Resources Board*, August 21, 2001 (accessed June 27, 2008). http://www.arb.ca.gov/research/health/fs/fs1/fs1.htm.

- *Amendments to Vehicle Inspection Maintenance Program Requirements Incorporating the Onboard Diagnostic Check*; Federal Register, Part II, Environmental Protection Agency, 40 CFR, Parts 51 and 85, April 5, 2001 (Final).

- *April 2004 Evaluation of the California Enhanced Vehicle Inspection and Maintenance (Smog Check) Program*; Report to the Legislature, California Air Resources Board and Department of Consumer Affairs/Bureau of Automotive Repair, September 2005 (Final).

- *BAR-97 Emissions Inspection System Specifications*, dated May 1996, as revised August 2008.

- *Calendar Year 2007, OBDII Readiness Monitor Test Results for Vehicles Model-Year 2001 and Newe*r, Bureau of Automotive Repair, G. Torgerson.

- *Development of and Emissions Impacts of More Stringent ASM Cutpoints in the California Smog Check Program*, Sierra Research, Inc., July 14, 2005, P. Heirigs, G. Torgerson, R. Joy.

- *Executive Summary Report for Calendar Year 2007*, California Department of Consumer Affairs, Bureau of Automotive Repair.

- *Vehicle Lookup Table (VLT) Row Specific Emissions Standards (Cutpoints) Table*, dated August 30, 2008.

**BUSINESS IMPACT:**

VLT Row Specific Emission Standards

*Smog Check Station Impact*

More stringent cutpoints will result in an increased failure rate and additional retest inspections for vehicles that initially fail the Smog Check inspection.

Smog Check stations that perform repairs will derive revenue through increased repairs necessary to correct failing vehicles. Stations that perform retests may derive revenue through additional inspection fees. In its report, Sierra Research estimated that failure rates could be increased from 10.4 percent to between 11.9 percent and 12.8 percent with the implementation of VLT row specific emission standards. Assuming cutpoint changes result in a two percent increase in the vehicle failure rate, it is estimated that 186,000 additional vehicles will fail out of the 9,300,000 vehicles that are tested annually. Using 2007 calendar year data, this translates to $38.5 million in additional repair revenue, based on an average repair cost of $206.82, as reported by Smog Check stations into the Smog Check inspection equipment.

*Consumer Impact*

Consumers with failing vehicles will be required to obtain repairs in order to pass the Smog Check inspection. It is estimated that 186,000 more consumers per year could have their vehicles fail the emissions portion of the test due to more stringent cutpoints.

Furthermore, consumers may be required to pay additional retest fees due to the implementation of this regulation. The average inspection fee is $47.26 and the average repair cost is $206.82. This results with a total consumer impact of $254.08.

However, for low-income consumers and consumers directed to Test-Only or Gold Shield stations, BAR has a program in place to help mitigate the cost of emissions-related repairs needed to bring a vehicle into compliance with the Smog Check Program. The Consumer Assistance Program (CAP) provides up to $500 in financial assistance toward emissions-related repairs to qualifying consumers.

BAR projects an increase in consumers seeking financial assistance under CAP to repair their vehicles as a result of this regulation, which can be absorbed within existing resources.

Overall, better identification of high emitting vehicles via VLT row-specific cutpoints offers more opportunity to reduce air pollution through emissions reducing repairs. Californians will benefit from improved health and reduced medical costs from better air quality.

<u>Pass/Fail Criteria for On-Board Diagnostic System Readiness Monitors</u>

*Smog Check Station Impact*

Revising the OBDII requirement for 2001 and newer model-year vehicles will result in an increased failure rate and additional retest inspections for vehicles that initially fail the inspection.

Smog Check stations that perform repairs will derive revenue through increased repairs necessary to correct failing vehicles. Stations that perform retests may derive revenue through additional inspection fees. Based on Smog Check program data, an estimated 100,000 additional vehicles would have failed in calendar year 2007 from the 2,300,000 vehicles that are model-year 2001 and newer. However, vehicles with more than one unset readiness monitor, resulting in a failure, may not necessarily have repairable defects. Instead, additional time may be necessary to allow the monitors time to complete the diagnostic tests. Thus, the potential repair revenue associated with these additional failures is difficult to accurately quantify, but could be as much as $20.7 million in additional repair revenue, based on an average repair cost of $206.82, as reported by Smog Check stations into the Smog Check inspection equipment.

*Consumer Impact*

Consumers with failing vehicles will be required to obtain repairs in order to pass the Smog Check inspection. It is estimated that 100,000 more consumers per year will have vehicles that fail the OBDII portion of the test due to the change in the readiness monitor requirement.

Furthermore, consumers may be required to pay additional retest fees due to the implementation of this regulation. The average inspection fee is $47.26 and the average repair cost is $206.82. This results with a total consumer impact of $254.08.

For low-income consumers and consumers directed to Test-Only or Gold Shield stations, BAR has a program in place to help mitigate the cost of emissions-related repairs needed to bring a vehicle into compliance with the Smog Check Program. The Consumer Assistance Program (CAP) provides up to $500 in financial assistance toward emissions-related repairs to qualifying consumers.

Overall, better identification of newer vehicles needing repairs using existing OBD technology offers more opportunity to reduce air pollution. Californians will benefit from improved health and reduced medical costs from better air quality.

<u>Revisions to Emission Inspection System Specifications</u>

The revision of the EIS Specifications and incorporation by reference of the updated version will have no adverse impact on businesses.

BAR plans to absorb the cost associated with the software update; thus, Smog Check stations will not incur the additional expense traditionally associated with such an update.

Disabling Process for Non-Compliant Emission Inspection Systems

This regulatory amendment clarifies existing language that prevents a station from using a non-compliant EIS to perform Smog Check inspections by specifying how the EIS will be disabled through the VID. There is no new business or consumer impact associated with this proposed change to the language.

**SPECIFIC TECHNOLOGIES OR EQUIPMENT:**

The regulation mandates the use of specific technologies or equipment.

Specifically, a software update will be required to update the VLT, which will contain both the revised cutpoints and the OBD readiness requirements, and reside in the BAR-97 EIS. Also included in the revised EIS Specifications are modifications that will allow Smog Check inspections on diesel-powered vehicles.

**CONSIDERATION OF ALTERNATIVES:**

No reasonable alternative to the regulation would be either more effective in carrying out the purpose for which the action is proposed or as effective and less burdensome to affected private persons than the proposed regulation.

Set forth below are the alternatives which were considered and the reasons each alternative was rejected.

VLT Row Specific Emission Standards

1. Tighten cutpoints within the current cutpoints framework – While new vehicle standards are the same within vehicle classes, not all vehicles certified in each class respond similarly when tested with the ASM test procedure. Due to vehicle design differences, one vehicle's ASM emissions may exceed another vehicle's ASM emissions even though emission controls on both vehicles are in proper working condition. The alternative of tightening cutpoints within the current framework was rejected because the current cutpoints could not be substantially changed without producing excessive false failures for some vehicles.

2. Assign model-year specific cutpoints – The current emission standards categories could be broken down to create separate categories for each model-year. This alternative was rejected because there are still design-related ASM performance disparities within model-years.

Pass-Fail Criteria for On-Board Diagnostic System Readiness Monitors

1. BAR considered taking no action. However, California would not be taking full advantage of the OBD technology and maximizing the potential emission reduction benefits from these newer vehicles.

Revisions to Emission Inspection System Specifications

1. BAR considered not updating the EIS Software needed for the VLT update. Without such an update, however, large scale table updates, such as those required to implement revised cutpoints, could not be made. Alternatives used in the past, such as the Low Pressure Fuel Evaporative Test and the Visible Smoke Test, allow for testing outside the operation of the EIS. The proposed revisions, including the VLT update and OBDII system readiness monitor changes, are critical to the inherent operation of the EIS. By taking no action, all potential benefits from the new cutpoints would be lost. The emission benefits include up to 7.8 tons per day (tpd) of reductions in Reactive Organic Gases (ROG) and Oxides of Nitrogen (NOx) from motor vehicles.

   Also included in the revised EIS Specifications are modifications that will allow Smog Check inspections on diesel-powered vehicles. Since the requirement for diesel inspections is written into statute and there is no other way to meet the statutory implementation date, there was no alternative to a Software revision.

Disabling Process for Non-Compliant Emission Inspection Systems

1. BAR considered taking no action. Smog Check stations are currently required to use only hardware and software approved by BAR to perform Smog Check inspections. However, this regulatory amendment clarifies existing language that prevents a station from using a non-compliant EIS to perform Smog Check inspections by specifying how the EIS will be disabled through the VID.